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EXAMINER
WRIGHT, ANDREW D

ART UNIT	PAPER NUMBER
3617	

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/832,739	EAGLES ET AL
	Examiner	Art Unit
	Andrew Wright	3617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48,62-74 and 77-82* is/are pending in the application.

4a) Of the above claim(s) *49-61,75 and 76* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48,62-74 and 77-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3,10* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Application/Control Number 09/832,734 Attachment to Paper No. 11
Art Unit 3617

Notice Regarding Treatment of Irradiated Correspondence

The following papers have not been made part of the permanent records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of damage from the United States Postal Service irradiation process:

Mailroom Stamp Date	Certificate of Mailing Date
8/20/02	8/9/02
7/24/02	7/19/02

The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:

COPY OF PAPERS
ORIGINALLY FILED

If applicant wants to review the accuracy of the Office's copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Office's records of such papers (*i.e.*, a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(b)(4). Please do **not** call the Technology Center's Customer Service Center to inquiry about the completeness or accuracy of Office's copy of the above-identified papers, as the Technology Center's Customer Service Center will **not** be able to provide this service.

If applicant does not consider the Office's copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents. If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Office's copy will be used as the permanent Office record of the above-identified papers (*i.e.*, the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

DETAILED ACTION

Election/Restrictions

1. Claims 49-61 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 10. Upon examination, it was found that claims 75 and 76 depend from nonelected claim 53 and were mistakenly left out of the restriction requirement. These claims are also withdrawn from consideration.

Claim Objections

2. Claim 46 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 46 depends from claim 44, while the text of claim 46 is identical to that of claim 44. There is no further structural limitation.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4, 9, 10, 26, 27, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 4 recites "the two longitudinal stiffening beams", where before only "at least two ... beams" has been recited. This renders the claim indefinite as it is unclear if the invention contains only two beams or if it contains more than two beams. Claim 4 also is incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Claim 4 recites that the third beam provides ballast when filled. It has not been recited that the beam is fillable. This renders the claim indefinite.

6. Claim 9 recites "said circumferential stiffening beam", where before "at least one ... circumferential beam" has been recited. This renders the claim indefinite as it is unclear if the invention contains only one beam or if it contains more than one beam.

7. Claim 10 recites "said circumferential stiffening beam", where before "at least one ... circumferential beam" has been recited. This renders the claim indefinite as it is unclear if the invention contains only one beam or if it contains more than one beam.

8. Claim 26 recites "a reinforcing fiber" while claim 18 has already recited "fiber reinforcements." It is unclear if the reinforcing fiber of claim 26 is included in the "fiber reinforcements," or if it is a different element. This renders claim 26 indefinite. Claim 26 also recites "the void" in the last line. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 27 recites "said beam separator", where before "a plurality of beam separators" has been recited. This renders the claim indefinite as it is unclear if the invention contains only one beam separator or if it contains more than one beam separator.

10. Claim 32 recites the limitation "the reinforcing element" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is unclear if applicant is referring to the longitudinal (claim 29) or circumferential (claim 30) reinforcing elements.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

12. Claims 67 and 70 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nishizawa et al. (US 3,561,219). Nishizawa discloses a flexible containment vessel that holds fluidisable material. The vessel comprises multiple elongate, tubular structures of woven, seamless fabric. The tubular structure has front and rear ends that are sealable. The tubular structures are fillable. The tubular structures are impervious to fluidisable material of a size greater than the voids of the woven fabric. The tubular structures are held together by a woven flat fabric that is woven seamless with the tubular structures and positioned therebetween. The tubular structures are pod shaped.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1-6, 12, 18-24, 29, 31, 34, and 40-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawthorne et al. (US 2,997,973) in view of Sharpless et al.

(US 5,421,128). Hawthorne discloses a fluid containment vessel for use with fluid cargo. The vessel comprises an elongate, tubular structure made of seamless, woven fabric (column 1, lines 64-72). Hawthorne discloses the practice of proofing the woven material to make it impervious to the liquid carried within. The tubular structure has front and rear ends, as seen in the figures. The front and rear ends are shaped into a conical form and are further provided with end members (12) for sealing. The structure has filling and emptying pipes that are flexible and blended into the fabric of the vessel (column 1, lines 33-34). Hawthorne does not disclose at least one longitudinal stiffening beam, said beam being integral with the tubular structure. Sharpless discloses a woven, elongated, tubular structure that has longitudinal stiffening beams. Sharpless discloses that the beams may take the form of reinforcing fibers (4) woven into the fabric (3), or reinforcing tape (8) bonded to the outer surface of the fabric (3). The reinforcing fibers are considered integral with the fabric since they are woven together. The reinforcing fibers enhance the bending stiffness of the tubular structure. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hawthorne by using interwoven longitudinal reinforcing beams. The motivation would be to enhance bending stiffness so as to reduce the common problem of oscillation of the vessel. The beams are subject to the pressurization and depressurization of the atmosphere that the vessel is in.

15. Regarding claim 2-4, Sharpless discloses a plurality of stiffening beams, including two that are equidistant from each other on the tubular structure with a third placed intermediate the two (figure 4).

16. Regarding claim 5, Sharpless discloses that the beams are continuous.

17. Regarding claim 6, Sharpless does not disclose that the beams are sectional. One skilled in the art, however, would have the knowledge and capability to utilize sectional instead of continuous reinforcing beams. Sectional beams would provide the same bending stiffness as continuous beams. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by using sectional beams. The motivation would be to optimize manufacturing processes.

18. Regarding claim 12, Hawthorne provides an end cap for sealing.

19. Regarding claims 18-20, Sharpless discloses at least ten longitudinal fibers (4) in figure 4. Two can be considered to be longitudinal stiffening beams, while the others can be considered as fiber reinforcements. Sharpless discloses that the fibers are Kevlar (polyaramid) and the weave can be seen in figure 3.

20. Regarding claims 21-24, Hawthorne discloses that the fabric weave is proofed to make it impervious to the liquid carried within. Hawthorne disclose the use of elastomers and resins as the proofing material that is applied to the woven fabric. This falls within the claimed group.

21. The modified invention of Hawthorne as described with respect to claims 1-6, 12, and 18-24 contains all of the elements of claims 29, 34, and 40-45.

22. Regarding claim 31, Sharpless disclose that the reinforcing fibers have a higher tensile strength than that of the fibers of the fabric.

23. Claims 7-10, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claim 1 above, and further in view of Renoux (US 3,955,524). Hawthorne does not disclose circumferential stiffening beams formed integrally with the tubular structure. Renoux disclose the use of both longitudinal and circumferential stiffening members. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Hawthorne by using circumferential stiffening members as taught by Renoux. The motivation would be to further enhance the stiffness of the vessel. Furthermore, it would have been obvious to weave the circumferential members integrally with the fabric as with the longitudinal members disclosed by Sharpless. The motivation would be to provide a unitary structure. The circumferential beams would be subject to the same environmental pressurization as the rest of the vessel. Renoux discloses the use of multiple circumferential members. As discussed above with respect to the longitudinal members, it would have been obvious to use either continuous or sectional circumferential members.

24. The modified invention of Hawthorne as described with respect to claim 7 contains all of the elements of claim 30.

25. Regarding claim 32, Sharpless disclose that the reinforcing fibers have a higher tensile strength than that of the fibers of the fabric.

26. Claims 11, 13-17, 33, and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claim 1 above, and further in view of Cann et al. (GB 933,889). Regarding claims 11, 13, and 17, Hawthorne does not disclose a flattened, folded end structure that is mechanically secured. Cann discloses a flexible barge comprising a flexible tubular structure where one end is provided with a flattened, folded end structure that is mechanically secured (figures 1 and 2). The flattened front end comprises a seam that allows coupling of tow bar (12). Cann discloses that the rear end comprises a vertical seam (11) that constitutes a stiffening beam. The vertical beam, in conjunction with the horizontally disposed front, aids in preventing rotation of the tubular member. One would be motivated to use the Cann end sealing means instead of the Hawthorne means to provide a multi-point attachment at the tow end of the tubular structure to prevent spinning of the tubular structure. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by using the end sealing means disclosed by Cann. Applicant is reminded that product by process claims are examined according to the resultant structure, and the method or process steps used in achieving said structure are not afforded patentable weight (see MPEP §2113).

27. Regarding claims 14-16, the modified invention of Hawthorne as describe in the preceding paragraph comprises an end structure that is sealed and is approximately the diameter of the tubular structure. Furthermore, the modified invention includes a rigid

tongue member that matches the sealed end of the tubular structure. Hawthorne discloses passing the filling means through the end cap.

28. The modified invention of Hawthorne as described with respect to claims 11, 13-17 contains all of the elements of claims 33, 35-39.

29. Claims 25, 26, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claims 1 and 19 above, respectively, and further in view of Lowe (US 4,668,545). Hawthorne does not disclose the use of fibers with low melting points to fill the voids in the weave. Lowe discloses a shaped woven article that comprises holt-melt fibers that make the fabric impervious. Holt-melt fiber is known in the art and is an alternate way of coating a fabric as opposed to spray or dip coating or providing an inner bag. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use hot-melt fibers to create the impervious coating. The skilled artisan would be motivated to use hot-melt coating to optimize design parameters such as manufacturing costs and methods.

30. The modified invention of Hawthorne as described with respect to claims 25 and 26 contains all of the elements of claims 47 and 48.

31. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claims 1 above, and further in view of Grihangne (US 3,952,679) and Nishizawa et al. (US 3,561,219). Hawthorne does not disclose plural vessel positioned side by side with beams connecting and separating the vessels. Grihangne disclose the practice of linking two vessels side by side connected

and separated by a beam (30). Nishizawa discloses a flexible vessel for fluidisable materials that comprises multiple side by side compartments connected and separated by a woven beam (2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use employ a plurality of vessels as taught by Grihangne, the motivation being to increase the hauling capacity of one tow vessel.

32. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claims 27 above, and further in view of Doerpinghaus (US 3,067,712) and Nishizawa et al. (US 3,561,219). Hawthorne does not disclose plural vessel positioned side by side with a woven material connecting and separating the vessels. Doerpinghaus discloses multiple vessels held together, end to end, with a wire mesh. Nishizawa discloses a flexible vessel for fluidisable materials that comprises multiple side by side compartments connected and separated by a woven beam (2). Based upon the teaching of Doerpinghaus and Nishizawa, it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the side by side vessels with a woven article that encapsulates the multiple vessels. The motivation would be to have a flexible connection that could be integrated with the weave of the tubular vessels to make a unitary article.

33. Claims 62-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawthorne et al. (US 2,997,973) in view of Cann et al. (GB 933,889). Hawthorne discloses a fluid containment vessel for use with fluid cargo. The vessel comprises an elongate, tubular structure made of seamless, woven fabric (column 1, lines 64-72). Hawthorne discloses the practice of proofing the woven material to make it impervious

to the liquid carried within. The tubular structure has front and rear ends, as seen in the figures. The front and rear ends are shaped into a conical form and are further provided with end members (12) for sealing. The structure has filling and emptying pipes that are flexible and blended into the fabric of the vessel (column 1, lines 33-34). Hawthorne does not disclose that the front end is a flattened bow-like structure that is perpendicular to the waterline. Cann discloses a flexible barge comprising a flexible tubular structure where one end is provided with a flattened, folded end structure that is mechanically secured (figures 1 and 2). The flattened front end comprises a seam that allows coupling of tow bar (12). Cann discloses that the rear end comprises a vertical seam (11) that constitutes a stiffening beam. The vertical beam, in conjunction with the horizontally disposed front, aids in preventing rotation of the tubular member. The skilled artisan would recognize that the orientation of the two ends could be reversed, such that the front end was the vertical end and the rear end was horizontal. Such an arrangement would still aid in preventing spinning of the tubular structure. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by using the end sealing means disclosed by Cann, with the front end disposed in a vertical fashion and the rear end disposed in a horizontal fashion. Applicant is reminded that product by process claims are examined according to the resultant structure, and the method or process steps used in achieving said structure are not afforded patentable weight (see MPEP §2113).

34. Claims 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al. (US 3,561,219) in view of Hawthorne et al. (US 2,997,973).

Nishizawa discloses a flexible containment vessel that holds fluidisable material. The vessel comprises multiple elongate, tubular structures of woven, seamless fabric. The tubular structure have front and rear ends that are sealable. The tubular structures are fillable. The tubular structures are held together by a woven flat fabric that is woven seamless with the tubular structures and positioned therebetween. Nishizawa does not disclose that the means for filling and emptying comprises a tube woven seamless with the fabric. Hawthorne discloses a flexible fluid container that is formed of an elongate, flexible tubular structure of seamless, woven material. The filling and emptying means of Hawthorne comprises tubes that are woven integral with the fabric. One would be motivated to use the filling and extracting means disclosed by Hawthorne in order to fill and empty the Nishizawa vessel when it is disposed in the ground. This would allow easy access to the interior of the Nishizawa vessel. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Nishizawa by using the integrally woven filling and emptying pipe taught by Hawthorne.

35. Claims 71-74 and 77-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawthorne et al. (US 2,997,973) in view of Ashton (GB 826,301). Hawthorne discloses a fluid containment vessel for use with fluid cargo. The vessel comprises an elongate, tubular structure made of seamless, woven fabric (column 1, lines 64-72). Hawthorne discloses the practice of proofing the woven material to make it impervious to the liquid carried within. The tubular structure has front and rear ends, as seen in the figures. The front and rear ends are shaped into a conical form and are

further provided with end members (12) for sealing. The structure has filling and emptying pipes that are flexible and blended into the fabric of the vessel (column 1, lines 33-34). Hawthorne does not disclose at least one longitudinal stiffening beam held in a pocket, said pocket being woven seamlessly with the woven fabric. Ashton discloses a flexible fluid containment vessel that comprises longitudinal stiffening beams (7) disposed in pockets (8 and 9) on the outside of the vessel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hawthorne by employing stiffening beams as taught by Ashton. The motivation would be to reduce harmful oscillation of the towed vessel. Furthermore, it would have been obvious to seamlessly weave the pockets to the woven fabric of the tubular structure. Ashton does not disclose a method of attachment. Seamless weaving of the pockets to the fabric would be within the scope of knowledge and capability of the skilled artisan who constructed the entire vessel of a seamlessly woven fabric. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by weaving the pockets to the tubular fabric. The motivation would be to produce a unitary structure without the use of adhesives.

36. Regarding claims 72 and 73, Ashton discloses a plurality of stiffening beams. Ashton does not disclose the spacing of the beams. However, a symmetric spacing about the circumference of the tubular vessel is an obvious option. Therefore, t would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by using at least two beams

positioned equidistant about the tubular structure. The motivation would be to create a balanced vessel.

37. Regarding claim 74, the beams disclosed by Ashton are continuous and each individual pocket is continuous.

38. The elements of claims 77 and 78 are included in the modified invention of Hawthorne as described above with respect to claims 71-74.

39. Regarding claim 79, Hawthorne discloses pleats (35) in the fabric. These pleats constitute sections of the fabric joined together.

40. Claims 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claims 77-79 above, respectively, and further in view of Renoux (US 3,955,524). Hawthorne does not disclose circumferential stiffening beams held by integrally formed circumferential pockets. Renoux discloses the use of both longitudinal and circumferential stiffening members. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Hawthorne by using circumferential stiffening members as taught by Renoux. The motivation would be to further enhance the stiffness of the vessel. Furthermore, it would have been obvious to use integrally woven circumferential pockets similar to the integrally woven longitudinal pockets. The motivation would be to provide a unitary structure.

Conclusi n

41. Any inquiry concerning this communication should be directed to examiner Andrew D. Wright at telephone number (703) 308-6841. The examiner can normally be reached Monday-Friday from 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano, can be reached at (703) 308-0230. The fax number for official communications is 703-872-9326 for before final proceedings and 703-872-9327 for after final proceedings. The fax number for the examiner for unofficial communications is 703-746-3548.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1113.

Andrew D. Wright
Patent Examiner
Art Unit 3617

S. JOSEPH MORANO
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